

ABSTRACT OF THE DISCLOSURE

In a method for determining the rotor position of a synchronous motor, a plurality of current vectors having different directions is applied to the synchronous motor. Absolute values of required ones of the current vectors are determined to obtain a defined excursion of the rotor. Inverse values of the determined current vectors are then digitally filtered using several of the inverse values to determine Fourier coefficients of the first harmonic of the inverse values. The rotor position of the synchronous motor can then accurately be computed with the determined Fourier coefficients.